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AUTHOR Evans, Rupert N.
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ABSTRACT

Several small group discussion sessions were convened to account for the fact that public support of vocational education continues to be strong, despite the fact that the outcomes of vocational studies that have been measured show only modest effects for some people in some programs. The panelists concluded that there are six types of outcomes for vocational education: individual labor market-related and education-related outcomes, institutional labor market-related and education-related outcomes; and societal labor market-related and education-related outcomes. While research on the outcomes of vocational education usually looks at only one or two of these six outcomes, the public apparently considers outcomes in all of the six areas and performs a rough sum of the benefits of vocational education. This broader evaluation of the outcomes of vocational education leads the public to desire more vocational education. Based on this realization, the panelists proposed a number of recommendations concerning future research and legislation dealing with vocational education. Included among these were calls for more research focusing on multiple outcomes and on the interrelationship of labor market- and education-related outcomes. Also, there were calls for federal legislation to emphasize outcomes that affect society as a whole, such as equity and productivity, rather than individual or institutional outcomes. (MN)

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LABOR FORCE-RELATED OUTCOMES, EDUCATION-RELATED OUTCOMES, AND PUBLIC ACCEPTANCE OF VOCATIONAL EDUCATION

Rupert N. Evans

The National Center for Research in Vocational Education
The Ohio State University
1960 Kenny Road
Columbus, Ohio 43210
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FOREWORD

During the months of September and October 1982, the National Center was fortunate to have in residence Rupert Evans as a visiting scholar. Dr. Evans had recently retired as professor emeritus at the University of Illinois. During his stay, Dr. Evans planned and conducted two convenings that brought a small number of invited participants to the National Center to meet with an equally small number of staff members. The topics of these convenings are of wide interest to vocational educators and policymakers: the educational and labor market outcomes that are associated with participation in vocational programs. In this paper, Dr. Evans summarizes the major topics discussed in these convenings and suggests a number of research and policy implications that stem from current knowledge of these topics.

On behalf of the National Center, I wish to express our appreciation to Dr. Evans for conducting and reporting these convenings. These efforts not only synthesize what is now known, but also point to future directions.

During his time at the National Center, Dr. Evans was in the Evaluation and Policy Division, which is directed by N. L. McCaslin. Dr. Evans worked directly with Morgan Lewis in planning and conducting the convenings. Sherri Trayser attended to the many details of conducting the meetings and provided the word processing to produce this report. Constance Faddis edited the final draft.

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Robert E. Taylor
Executive Director
National Center for Research in
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EXECUTIVE SUMMARY

There is a discrepancy between the measured outcomes of vocational education and public acceptance of vocational education. The outcomes that have been measured show modest effects for some people in some programs. But almost every measure of public attitudes and behaviors shows strong support for vocational education.

This paper grew out of small group discussions sessions at the National Center for Research in Vocational Education that were convened to consider labor market-related and education-related effects of vocational education. The paper explores possible reasons for the discrepancy and concludes the following:

1. There are six types of outcomes for vocational education:

	Labor Market-related Outcomes	Education-related Outcomes
Individual Outcomes	A	B
Institutional Outcomes	C	D
Societal Outcomes	E	F

2. Research on outcomes usually looks at only one or two types of outcomes in one or two of these cells. It usually concludes that the benefits of the outcomes studied are small. Apparently, however, the public considers outcomes in all of the six cells and performs a rough sum of benefits. It concludes that it desires more vocational education.

3. In 1963, Congress moved vocational education away from an emphasis on specified subject matter toward an emphasis on cells A (individual labor market-related outcomes) and C (instructional, labor market-related outcomes). This resulted in vastly increased vocational education enrollment and in the expansion of vocational programs in a variety of institutions. Today, 78 percent of high school graduates have taken at least one vocational course, and even college preparatory students average more than two such courses.

In 1976, Congress specified that enrollment be abandoned as the principal criterion for distribution of vocational education funds, and that it be replaced by individual, institutional, and community poverty. However, these criteria were not generally put into effect until the later 1970s. This fact (and a long list of

INTRODUCTION

There is a discrepancy between the measured outcomes of vocational education and public acceptance of vocational education. The outcomes that have been measured show modest effects for some people in some programs. But almost every measure of public attitudes and behaviors shows strong support for vocational education. Perhaps the most convincing evidence is the fact that 78 percent of secondary school graduates now take at least one vocational education course (Campbell, Orth, and Seitz 1981). Even college preparatory students have an average of two units of secondary school vocational education. Why is there such a discrepancy between the research evidence and public acceptance?

The public expects education to provide access to better jobs for those who work hard and succeed in school. It expects vocational education in secondary and postsecondary schools to aid in this goal in a number of ways: (1) by providing vocational programs designed for youth who do not want a baccalaureate degree (although these programs are sometimes taken by youth who do want a baccalaureate degree), (2) by providing vocational courses for all youth who want them, and (3) by helping adults acquire skills that aid their careers. The public shows that it believes in vocational education by enrolling in record numbers, and by maintaining vocational education while cutting back on other educational programs.

Employers want more productive workers. They believe that this requires basic education as well as education that provides both employability skills training and occupational skills training.

Congress and state legislatures generally accept the public's view and the employers' view of what vocational education should do. Congress adds a concern for the disadvantaged and handicapped, however, in part because it knows that those who do not work are a burden on society.

The executive branch of government never has enough money to meet the demands placed upon it. For the last two decades federal officials, especially in the Labor Department, have increasingly demanded research evidence of vocational education's effectiveness, in part because they hope that the research will identify ineffective programs. Funding for such programs could then be eliminated, thus helping to solve budget problems. Legislative staff want evidence of effectiveness in meeting the needs of the disadvantaged and handicapped.

As this evidence has accumulated, it has become clear that vocational education meets (reasonably well) its congressionally

mandated evaluation criteria: (1) training-related placement (almost uniformly 50 to 80 percent) and (2) employer satisfaction (almost all are "satisfied" with vocational graduates). Nevertheless, the benefits shown by researchers tend to be marginal: some types of programs (especially clerical and trade) for some groups of people (especially women) produce significant labor market effects. The research says that even though employers prefer vocational graduates, they are willing to pay them only a little more and to retain them only a little longer than non-vocational graduates. In short, the benefits shown by researchers are relatively small, on the average (Lewis 1982a, 1982b).

The public, however, shows strong support of vocational education. As measured by local tax support and by attitude surveys, acceptance is high and has been increasing, particularly during the past two decades (the very period during which quantitative evaluations have been most prominent).

Enrollment trends similarly show increasing public support. Almost all vocational education comes after the end of compulsory schooling, and it is never a required subject. Enrollments increased slowly but steadily until 1963, when Congress ended its requirement that specified amounts be spent on specific vocational subjects. Since then it has increased more rapidly, and now more than three-fourths of public high school students take one or more vocational classes, whereas more than half of the students in one- or two-year public postsecondary schools enroll in vocational education.

Congress also has supported vocational education, and local and state taxing authorities have been even more supportive. Every increase in federal funding has been accompanied by even larger local and state increases.

Why is there such strong public and legislative support for vocational education when the results of evaluations are not so strong? Any discrepancy is of interest to scholars, who find that anomalies are a fruitful source of important research questions. This particular discrepancy appears to have important policy implications as well. Learning more about it may help to explain why executive branch support for federal funding of vocational education has been almost nonexistent since the time of President Hoover, whereas congressional support during this same period barely wavered. Year after year, the administration proposes that funds for vocational education be cut, but Congress responds by maintaining or increasing the funds. This paper examines some of the possible explanations for this discrepancy.* and suggests some actions that should be taken to resolve it.

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*A more complete list appears in Appendix A.

LABOR MARKET-RELATED AND EDUCATION-RELATED OUTCOMES

Research on the effectiveness of vocational education has emphasized two types of outcomes: labor market-related outcomes and education-related outcomes. Labor market-related outcomes include annual earnings, labor force participation rates and frequency and duration of unemployment. They also include perceptions (held by former trainees, employers, parents, and other interested parties) of the value of vocational education for labor market uses. In addition to surveys that indicate those perceptions, it is useful to look at actual behavior, such as (1) purchase of training services from schools and provision of services and equipment to schools, (2) participation on advisory committees, (3) solicitation of information about students before employment, and (4) analysis of new hires to see which training systems supply them.

Education-related outcomes include changes in school dropout and attendance rates, in verbal and computational skills, in types of reading done, and in participation in further education and training programs. They also include perceptions of the value of vocational and nonvocational education by trainees and other key groups, as well as perceptions of participation in educational activities by the community. The principal crossover between these two types of outcomes occurs when we attempt to assess the extent to which the titles of the jobs in which former vocational education students are placed correspond to the names of the vocational courses or programs in which they were previously enrolled.

In September 1982 the National Center for Research in Vocational Education brought together two small groups of experts to examine those outcomes of vocational education that are related to the labor market and those that are related to education.* Precompletion and postcompletion outcomes were examined.** There was general agreement that the purposes of vocational programs and the quality of the programs vary widely from state to state and from locality to locality. Therefore, it is not surprising that, on average, almost all of the data on all of the outcomes are no more than mildly positive. Even in the cases where the outcomes are not positive, there usually are logical explanations of why this is true. For example, although the labor force participation rate and earnings of former home economics students are lower than for comparable nonvocational students, a plausible

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*See Appendix B for information about the groups of experts convened.

**See Appendix C for a list of outcomes.

explanation is that many of these students are preparing for work as homemakers, and society does not pay homemakers or count them as part of the labor force.

These research conclusions were not particularly startling. Almost every recent evaluation of vocational education has produced similar results. What was new was the convened experts' recognition that almost all of the evaluations concentrated on the effects of vocational education on individuals, while neglecting its effects on institutions and society.

Based on this discussion, it seems clear that a reformulated statement of the relationship among outcomes is needed. Figure 1 shows a possible reformulation.

	Labor Market-related Outcomes	Education-related Outcomes
Individual Outcomes	A	B
Institutional Outcomes	C	D
Societal Outcomes	E	F

Figure 1. Relationships among outcomes of vocational education

Almost all of the attention of researchers and evaluators has centered on cell A (individual, labor market-related outcomes) of figure 1. Even this cell has not been explored fully; until the early 1960s, most types of retraining of employees for new careers were forbidden by federal vocational education statutes. During the same period, almost all evaluations of trade and industrial education counted any enrollment of its graduates in postsecondary education as a failure of the system, so cell B (individual, education-related outcomes) received little attention. The affective domain received less attention than the cognitive or psychomotor domains (Dunn, Ridlen, and Walker 1981).

Current legislation clearly emphasizes individual, labor market-related outcomes; for example, entry-level vocational education is to be evaluated by ". . . the extent to which program completers and leavers--(i) find employment in occupations related to their training, and (ii) are considered by their employers to be well-trained and prepared for employment" (P.L. 94-482, 20 U.S.C. 2312, 1976). However, the law also specifies that pursuit of further education and training cannot be considered negatively in such an evaluation. This is not a positive endorsement of an education-related outcome, but it is a step in that direction.

Although cells C (institutional, labor market-related outcomes) and D (institutional, education-related outcomes) have been little studied, it is worth noting that the 1976 Amendments support involvement of vocational schools in job placement, which could be considered a step toward labor market-related institution building. The Amendments also continue support for area vocational schools, that have served in many states as the nucleus for the formation of new educational institutions which provide a wide variety of regional educational services.

Cells E (societal, labor market-related outcomes) and F (societal, education-related outcomes) have received even less attention. When individuals and institutions profit from vocational education, society also profits indirectly, because individuals and institutions are a part of it. But society as a whole may profit directly through a reduction of its costs for correctional, medical, remedial, unemployment, welfare, and other social service programs. Presumably, Congress has societal goals in mind when it demands greater attention to sex equity and to programs for the disadvantaged and the handicapped.

We know very little about the types and amounts of societal outcomes of vocational education, whether they are labor market related or education related. However, it appears that some institutional and societal effects may be far-reaching. For example, New York City is beginning to restructure its academic high schools to fit the successful model of its vocational high schools--including student choice of schools, selective admission of students, and attention to building staff and student esprit de corps (Perlmutter 1982). Trade associations and major corporations are linking with selected postsecondary technical programs to create new ways of training employees. States are restructuring vocational training as a way of helping to attract and keep businesses. Vocational education and occupational education in general are seen increasingly as a way to decrease the cost of other social programs.

RELATIONSHIPS BETWEEN LABOR MARKET AND EDUCATIONAL OUTCOMES

Labor market-related outcomes are the long-range, ultimate outcomes desired of vocational education. They are the outcomes that distinguish vocational education from other education. But in the short run, labor market-related outcomes are inherently unstable. Overnight changes in government policy or in the plans of a local employer can destroy opportunities for employment. Thus, a vocational program that consistently has had high placement rates at high wages can be turned overnight into a program that has poor labor market-related outcomes.

If a program is evaluated in terms of outcomes over which it has no control, this is not only unfair, but it is also likely to lead to a rejection of the results of the evaluation, rather than toward program improvement (which is what we seek with most evaluations). This is why most vocational educators ask to be evaluated in terms of the extent to which they have developed "employability" rather than "employment." Employability is an education outcome, though it necessarily has some relationship to potential labor markets.

Instead of seeking program improvement, of course, we could use evaluations as a means of program termination. Suppose that all programs were terminated as soon as their placement rates dropped below a certain level. The most likely reason for a sudden drop in placement rates is a local recession. It is less expensive (in terms of foregone earnings and increased availability of instructors) to provide job training during a recession than during a boom, so program termination based on placement rates could occur during the wrong part of the economic cycle.

Many (perhaps most) education-related outcomes should be precursors of labor market-related outcomes. We know that if education-related outcomes are not tested periodically against the labor market, they can become obsolete. Educational history is replete with examples of school subjects that were instituted because of their relevance to the labor market, but continued in the curriculum long after that relevance had disappeared.

We ought to use education-related outcomes as the daily and yearly test of the worth of vocational education, but we also ought to use a multiyear moving average of labor market-related outcomes to test the worth of the education-related outcomes that are relevant to the labor market.

There is a group of little-understood economic outcomes of vocational education that is not directly labor market related. If a person learns in vocational education how to repair a personal automobile or identify a well-constructed house or choose medical care wisely, the economic consequences may be substantial

even if the vocational education does not result in a job that uses these skills.

Evaluation of Multiple Outcomes

Every program has intended and unintended outcomes. Both should be evaluated, but it is easier to identify (and to evaluate) the intended outcomes.

Each vocational program has multiple goals, and hence has multiple intended outcomes. These goals are not the same in all vocational programs. For example, the goals of agricultural programs tend to be different from those in trade and industrial education; the goals of programs designed to prevent school dropouts (e.g., work experience and work study programs) tend to be different from the goals of those programs designed to provide skill development for youth in grades ten through fourteen; and both of these tend to be different from the goals of programs designed to attract employers to the region. Nevertheless, we tend to use a narrow cluster of labor market-related individual outcomes to evaluate each and every vocational program.

We know that programs tend to become more specific at each higher level of education. We also know that programs tend to achieve the outcomes that they emphasize. For example, programs that emphasize job placement are more likely to get job placements than those that do not emphasize it (McKinney et al. 1981). If programs are designed to achieve too many different goals, they are likely to make little progress in achieving some or all of these goals.

Almost every program has multiple goals and progress toward each goal has costs. Therefore, it is desirable (though difficult) to take into account the total costs of achieving the various goals. It is almost always easier to measure costs rather than benefits. Most--if not all--of the cost-benefit studies of vocational education charge total program costs against one or two goals. This makes achievement of favorable cost-benefit ratios unnecessarily difficult. In effect, it assumes that the benefits of other, unmeasured goals are costless.

It seems likely that members of local schools boards, state boards of education, state economic development agencies, and the federal government each believe that vocational education should emphasize somewhat different goals. For example, attracting employers from other states is a state--not a federal--goal. In pursuing this particular goal most states use state (rather than federal) funds. In other cases, funds provided by one branch or level of government are used to achieve the goals set by another branch or level.

The division of responsibility for goals, processes, and costs is not clear. Who should decide whether a system of schools should be restructured? The federal government often plays a decisive role in such determinations (e.g., by providing funds for area vocational schools). A state may mandate non-duplication of courses in its postsecondary schools, but refuse to provide housing for students who want to enroll in programs that are not available near their homes. Who should allocate the costs among the various goals of vocational education? This responsibility is not clear, either.

A RESEARCH AGENDA

Considering that different researchers have been using different data sets and different methods of analysis, it is remarkable that the results of vocational education evaluations for the past decade have been so similar. This lends credence to the effectiveness of vocational education, even though the differences between vocational and nonvocational students have not been large. If studies of additional outcomes of vocational education continue to emerge, it seems likely that similar, important but small differences will be found.

Federal research on vocational education increasingly has employed short-term projects designed to help federal administrators solve their immediate problems (Evans 1982). These short-range studies should be accompanied by a research agenda that attacks pervasive, long range problems of consequence to the whole field. Such an agenda is suggested in the following text.

1. It seems clear that we need to know much more about how to assess programs that seek multiple outcomes. How do these goals interact? How can we decide when we have too few goals (and hence have too narrow a program) or too many goals (which brings a risk of not achieving any of them)? If we enter a period of intense national competition (e.g., a trade war or a shooting war), should we seek to restrict vocational education to a goal of training-related placement? How can we best sum up the benefits of outcomes that are intercorrelated?

2. How do labor market-related outcomes interact with education-related outcomes? How should they interact? How can we avoid the problems caused by the inherent instability of the former without being trapped by the rigidities of the latter?

3. Most evaluation of education is process oriented. This has been rightly criticized, because "approved" processes may not yield desirable outcomes. However, as this paper suggests, the evaluation of outcomes also leaves much to be desired. How can this evaluation be improved?

4. Vocational educators frequently state that their programs prevent problems, whereas employment and training programs are remedial, but this statement is virtually untested. Does vocational education decrease the probability of needing training help from CETA, of needing unemployment, welfare, and similar payments? Vocational programs in correctional institutions are often promoted as a way of decreasing recidivism. Do they help? In short, what are the social outcomes of vocational education and how valuable are they?

5. In this country there are seven major systems of occupational education: (1) military technical training, (2) Job Training (formerly CETA), (3) apprenticeship training, (4) private training in business and industry, (5) universities, (6) public secondary and postsecondary school vocational education, and (7) independent (private) occupational schools. They all use a combination of on-the-job training and classroom/laboratory instruction. Which combination of training agencies and training methods is best for which outcomes for which types of students?

Inevitably, an outcome evaluation shows that most outcomes are at less than desired levels. The next question, in a formative evaluation, usually is, "What can we do to improve these outcomes?" This is another way of saying, "What processes need to be changed in order to improve the quality of this program?" For example, suppose that the job turnover rate of vocational graduates (a labor market-related outcome) is too high. This may be because attitudes toward work (an education-related outcome) are poor. We know that poor attitudes toward work can be caused by a cooperative education placement among workers who have poor attitudes toward work, or that they can be caused by a teacher who has poor attitudes toward work. Which processes should we change? Why not evaluate programs by using those process variables that are known to affect outcomes (especially if they are less expensive to assess)? How can we incorporate process variables into a more effective system of evaluating vocational education?

6. Vocational education is almost certainly subject to the law of diminishing returns. The proportion of the population that is taking vocational education courses has been going up, so we might expect that the returns to each successive increment of investment in vocational education would decline. However, other conditions are not constant. The proportion of secondary school students who take vocational education programs (the "concentrators") has remained nearly static. Most of the increase has been among students who take one, two, or three courses, and who hence spend much less time in vocational education. This affects the supply of general graduates, by changing their number and the content of what they study. It may also raise their wages.

As the proportion of high school graduates who have had vocational education coursework continues to increase, it is less and less defensible to use the general curriculum graduates as the comparison groups against which vocational education is judged. The proportion of high school dropouts is static, and the proportion of GED diploma holders is increasing rapidly. Neither of these groups has significant amounts of vocational education, but members of both groups have personal characteristics similar to those of vocational students. These would appear to be more appropriate groups against which to compare vocational education.

7. Costs per student are roughly proportional to time spent, so the cost per student is lower for nonvocational students. What has been and is likely to be the return per hour (or dollar spent) in vocational education? To what extent is the rate of return changed if we spend fewer hours per individual in vocational educational or if we enroll a greater proportion of the population in vocational education? Costs are probably lower per hour spent in vocational youth club activities than for time spent in class or on the job. How does the presence of youth club activities affect costs and returns? If returns to vocational education really are declining as the enrollments go up, why do the enrollments not stabilize, or even decline?

8. One goal of vocational education is to help people to improve working conditions. For example, a person who has had vocational education should be better able to recognize an unsafe condition and know what to do about it. What processes and outcomes are affected by this goal?

9. Vocational educators are frequently urged to increase the quality of their programs. Sometimes this is encouragement to change the degree of certain outcomes (e.g., by decreasing the length of time required to find employment). In other cases it suggests changing certain processes (e.g., by eliminating the teaching of incorrect occupational procedures). Often, however, the question of what constitutes "improved quality" is not clear, nor is it clear how "improved quality" can best be achieved. For example, is it true, as Evans (1979) contends, that the value added by vocational education is less when it is taught to the average student than when it is taught to those who are well above or below average in ability? If improvement of quality of processes is desired, which outcomes are affected by which changes in process?

10. A key issue in vocational education relates to sex stereotyping. Does vocational education enroll more or fewer atypical students in any of its occupational programs than are securing entry-level employment in that same occupation? In other words, is vocational education leading or lagging behind employment in sex stereotyping, and by how much?

11. Most of the evaluations of vocational education are based on averages. By their nature, averages include the very best and worst results and weight them equally. In contrast, individual studies of the very best and worst programs can provide important insights into what is and is not possible, and into what processes are associated with success and failure. More in-depth studies of individual programs are needed to provide these insights.

12. Many of the key policy issues of the future are likely to revolve around choices of processes and institutions (e.g.,

public versus private schools, secondary versus postsecondary schools, institutional versus on-the-job training, retraining versus entry-level training, training versus income transfer programs, categorical versus block grant programs, or certification for occupations versus laissez-faire entry into occupations). Which of these processes and institutions do what best, and for whom?

POLICY CONSIDERATIONS

Policies should be based on a set of values held by the policymakers. The policy recommendations stated here are based on assumptions that (a) vocational education is a part of education; (b) federal goals in vocational education should emphasize societal outcomes more than individual or institutional outcomes; (c) vocational education as a whole should emphasize a blend of individual, institutional, and societal outcomes that are labor market related and education related; (d) institutions tend to be rigid, and they are necessary but not sufficient to assure many types of individual and societal outcomes; (e) education-related outcomes are necessary but not sufficient to ensure many types of labor market-related outcomes; and (f) a major goal of researchers should be to learn more about the reasons for discrepant perceptions of vocational education held by the public, employers, Congress, and the federal administration, in order that these discrepancies may be reduced and policy may be formulated more effectively.

Policy-related Issues

1. Federal legislation for vocational education specifies labor market-related outcomes for individuals (training-related placement) and for one institution (employer satisfaction). It does not demand educational outcomes of any type, nor labor market-related outcomes for society.

Congress, however, specifies processes (e.g., employment of sex equity coordinators, minimum expenditures on the disadvantaged and handicapped and on postsecondary education) that it hopes will affect labor market-related social outcomes. This emphasis on equity-related processes was accelerated in the early 1980s by federal reviews of state vocational education procedures. The Management Evaluation Review for Compliance and Quality (MERCQ) forced states to comply with legislation that reversed the emphasis on increased enrollment that had previously been in effect for fifteen years. In spite of its name, MERCQ concentrated much more on compliance than on quality. It forcefully reminded the states that the 1976 Educational Amendments require that (1) family or individual income and (2) financial strength of the training agency are the two most important factors to be used in determining the distribution of federal vocational funds by the state. Indeed, the law prohibited allocation of funds on the basis of enrollment, as well as the matching of local expenditures on a uniform basis [P.L. 94-482, 20 U.S.C. 2306, Sec. 106(a)(5)]. By specifying processes that are not in accord with the specified outcomes, Congress appears to be paying only lip service to the issues of equity.

By emphasizing some outcomes more than others, Congress strives to move vocational education in the directions it sees as desirable. But the unintended effect may be to move vocational education away from outcomes that all would agree are desirable. We now have research evidence that confirms the conventional wisdom that you get what you emphasize. An example is that added emphasis on employer satisfaction may decrease preparation for entrepreneurship. Another example is that emphasis on training-related placement may decrease earnings (because people are willing to take less pay in order to get a job in a field for which they feel prepared).

How should we decide which outcomes should be emphasized? Congress will not appropriate funds for programs that have no specified outcomes. Perhaps, it would be wiser to encourage states to plan programs for which the expected outcomes are specified clearly, with emphasis on one or more of the cells in figure 1, and then to insist on data on achievement of these outcomes.

If it continues to be necessary for Congress to specify vocational education outcomes, it might be wise for programs to specify social outcomes, even at the expense of certain individual or institutional outcomes. Surely the federal government ought to emphasize social outcomes as its highest priority, because the welfare of society as a whole is its principal responsibility. If it continues to specify processes, then these processes should be in accord with the specified outcomes.

2. From the early 1960s to the late 1970s, federal rules for vocational education tended to increase the number of people served. This emphasis has been quite successful, but in some cases it appears to have been achieved at some sacrifice of quality. The declining population of young people makes this an ideal time to move vocational education from an emphasis on quantity to quality, while maintaining the recent emphasis on equity. In the next decade, secondary school enrollments will decline by about 25 percent (assuming continuation of trends in the school dropout rate and no major immigration of teenagers). In some schools, enrollment will decrease by 50 percent. Postsecondary enrollments will stabilize or perhaps drop somewhat. Many vocational classes will close. We know that at present the most important factor in deciding to close a vocational class is low enrollment (Franchak, forthcoming). Should we continue to let student enrollment determine which classes will be closed?

Declining enrollment will affect all secondary education, of course, not just vocational programs. As secondary school teachers worry more and more about their jobs, they become more likely to track students into their classes. Because academic teachers have more influence on determining which courses are mandated

than do vocational teachers, tracking into academic subjects may become a greater concern than tracking into vocational education. Secondary-level area vocational schools especially are likely to suffer, as home schools refuse to send their students away.

3. The decline in the numbers of students in the age range traditionally served by vocational education could be accommodated by reductions in the number of vocational teachers and in the variety of vocational programs offered in each school. Or, they could be offset by increases in the number of older workers who need retraining. What kinds of adjustments are needed in schedules, curriculum, instructional methods to serve these older workers? Should federal policy attempt to move vocational education toward serving more adult workers?

4. Another problem is likely to be caused by increased immigration of young workers to compensate for the decreased number of births in the United States during the 1960s and 1970s. These immigrants need simultaneous instruction in English and in vocational education, conducted in English or in their native language. How can we prepare vocational instructors to fill this need? Similar shortages of young workers in Germany and Japan have led to demands there for improved quality of vocational education and to investments in labor-saving equipment that has, in turn, led to a greater demand for retraining of older workers and to a need for upgrading the equipment used in vocational instruction.

5. Increased productivity of manufacturing in other countries has led to increased international trade competition and indirectly to a further shift in this country from manufacturing to service activities. Vocational education traditionally has emphasized preparation for the production of goods, while paying little attention to the much larger service sector. How can vocational education best be moved toward more emphasis on the expanding service sector?

6. It is well known that rural and inner city-schools have special costs associated with population dispersion and concentration. Many states take this into account in formulas for the distribution of general school funds to local schools. Should not federal reimbursement for vocational education programs take these factors into account, both at the state and the local level?

Policy Recommendations

1. Legislation should not specify vocational education processes unless the legislators are reasonably sure that each process specified is necessary for the achievement of a desired outcome.

2. Federal legislation should emphasize outcomes which affect society as a whole, such as equity and productivity, rather than individual or institutional outcomes.

3. From 1963 to 1976, federal incentives favored increased enrollment in vocational education. These incentives have achieved considerable success. From 1976 to the present, incentives have favored the least wealthy schools and communities, regardless of enrollment or quality of program. Future incentives should favor--

- o increased quality in vocational education programs
- o vocational education of immigrants brought in to meet the projected shortage of young workers
- o increased emphasis on vocational education for employment in the service sector

4. Federal and state funds should be distributed according to a formula that takes into account sparsity and density factors, in order to aid rural and urban schools.

5. The bulk of the federal research agenda should be defined as the study of long-term problems of national significance, rather than the study of immediate problems that trouble administrators of national offices. The key issue is how to reduce the enormous range in the quality of vocational education, both by eliminating the poorest programs and by improving (or replicating) the better programs.

APPENDIX A

Possible Reasons for Public Support in the Face of Lack of Research Support

1. "Vocational education has a superb lobby, and lobbies work better with the legislative than the executive branch of government." This statement is probably true, but it seems not to explain strong local-level funding, increases in enrollment, or public attitudes toward vocational education.

2. "There is a general trend toward a vocational emphasis at all levels of education, and vocational education is a beneficiary of this trend." This statement is probably true, but it does not explain the strong support of vocational education during the post-Sputnik era, when the study of technology and technological applications almost disappeared from the teaching of science and mathematics, because they were seen as hindering the development of high level professionals.

3. "Evaluators are using the wrong methods." This seems to be much less true today than it was during the 1960s, when most evaluators were not taking into account the fact that vocational education enrolls students who have lower verbal ability and lower socioeconomic status than students in other curricula. Some evaluators were counting each vocational graduate who continued schooling as a failure of the vocational program.

4. "The data being used by evaluators are faulty." This probably was a major factor at one time, but it is less so, now. Schools and students disagree about the curriculum in which a student is enrolled. Today, the better studies look at transcripts to see what subjects students took, but they also need to continue to look at student self-reports. Longitudinal data have helped greatly, but more extensive data designed to answer vocational education questions are needed.

5. "The public and legislators are more impressed with testimony from disinterested parties, with case studies, and with individual successes of which they are aware, than they are with statistics." This may well be true, but if so, it may be good; in any case, not much can be done about it.

6. "Evaluators are not evaluating the right outcomes." This paper looks at the possible labor market-related and education-related outcomes of vocational education as they affect individuals and institutions. Social outcomes (e.g., less crime, lower welfare costs) should also be considered, particularly in view of data on the favorable social outcomes of certain CETA

training programs. Vocational education and its students are certain to continue to have complex goals, so evaluators will probably continue to have difficulty in measuring some of the outcomes and weighting them in relationship to these goals.

APPENDIX B

Convening Participants

Labor Market Effects, 9-10 September 1982

Invited

Frank Santoro, State Director of Vocational Education, Rhode Island
Elizabeth Simpson, University of Wisconsin
Michael Borus, Ohio State University
David Pucel, University of Minnesota
Harry Broudy, University of Illinois (emeritus)

National Center Staff

Rupert Evans
N.L. McCaslin
Morgan Lewis
Donna Mertens
John Gardner
Floyd McKinney

Educational Effects, 20-21 September 1982

Invited

James Dunn, Cornell University
Roy Giehls, Florida State Department of Education
Gordon McMahon, National Occupational Competency Testing Institute
Jerry Olsen, State Director of Vocational Education, Pennsylvania
Deborah Perlmutter, Board of Education, City of New York
Henrietta Schwartz, San Francisco State University

National Center Staff

Rupert Evans
Linda Lotto
Jim Hamilton
Morgan Lewis
N. L. McCaslin
Floyd McKinney
Lorella McKinney
Donna Mertens
Frank Pratzner

APPENDIX C

Tentative List of Labor Market-related Outcomes and Correlates of Vocational Education

(Current rates and trends assessed precompletion, and short and long-term rates and trends assessed postcompletion)

Individual

- Employment during training
  - o Cooperative Education, work-study, self-obtained
  - o Types of jobs, amount of pay, hours of work, etc.
- Unemployment during training--frequency, duration
  - o Reasons for nonparticipation in the labor force
- Relationship between type of training and type of employment
  - o Ask trainee if and how the job is related to training
  - o Use relationship of training elements and job elements
- Earnings--hourly and annual
- Labor force participation rate in socially approved work
- Job satisfaction
- Knowledge of the world of work
- Occupational mobility
- Expectations about future earnings, job security, etc.
- Expectations about career, promotions, life-style, SES

Institutional

- Union, nonunion employment
- Public, private sector employment
- Employer satisfaction with graduates and school-leavers

Societal

- Number of times arrested
- Occupational mobility
- Perceptions (by prospective students, parents, school administrators, union, officials, legislators, government administrators) of vocational education as a whole
- Analysis of new hires to see which training systems supply them

Tentative List of Education-related Outcomes and Correlates of Vocational Education

Individual

- Dropout rates, reasons for dropping out
- School reenrollment rates
- Frequency of shifts from one program to another. Reasons?
- Number of school credits attempted and completed--secondary and postsecondary

Preenrollment and end of program scores on--
- o Achievement tests (reading, practical computation, etc.)
- o Career maturity tests
- o Consumer and economic knowledge tests
- o Creative awareness and activity tests
- o Knowledge of the world of work tests
- o Occupational proficiency tests
- o Ability to work with people
- o Types and amount of reading done
- o Participation in school activities (type and amount)
- o Proportion of school days absent or tardy
- o Proportion of classes attended--vocational and nonvocational
- o Grade point averages
- o Attitudes toward school

Student satisfaction with training
Participation in further education and training
- o Participation rates by type of program

Expectations about further education
Perceptions about previous education, counseling, etc.
Wishes about alternative types of education that might have been chosen
Ratings of adequacy of previous training
Completion rates for further education
Likelihood of attempting or completing GED tests
Length of time spent in preparing for GED tests

Institutional

Proportion of "concentrators," "explorers," etc.
Educational placement--by types of institutions and programs
Perceptions of current and former students toward--
- o Previous general and vocational education
- o Further general and vocational education
- o Desirable amounts, types and level of education

Who serves on advisory committees? Why?
- o Rate of attendance at meetings

Who purchases services for vocational education?
- o Amounts of, and reasons for donating services

Who is willing to provide short-term employment to
- o Vocational teachers to improve their skills? Why?

Who donates equipment to vocational education? Why?
Who solicits information (e.g., teacher recommendations,
- o Courses completed by students) from vocational education?
- o What use do they make of information?

Who provides information to vocational education (e.g., notices of job vacancies)? Why?
Effects of vocational education leadership in competency-based instruction and teacher education
Effects of vocational education leadership in laboratory-based instruction

Societal

Barriers to participation in current and further education

Perceptions (by prospective students, parents, school administrators, union officials, legislators, government administrators of--

- o Vocational education as a whole
- o Vocational education in types of schools (e.g., area, technical, comprehensive, secondary, postsecondary)
- o Vocational education in a particular school
- o A particular vocational instructor
- o A particular vocational class

Participation in civic activities (type and amount)

Participation in occupational associations (type and amount)

Participation in avocations (type and amount)

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